

CLAIMS

- Sub A 3
1. A process for producing a balloon comprising:
- (a) axially stretching an extruded tubing segment made of a polymer material while pressurizing the tubing at an internal pressure above ambient pressure, to produce a stretched parison, the tubing segment having a first ID and the polymer material having a glass transition temperature above ambient temperature, and then
- (b) blowing the balloon by expanding the stretched parison in a mold at a temperature above said glass transition temperature,
- wherein said axially stretching comprises the step (a)(i) of subjecting the tubing to a temperature and internal pressure which is sufficient to expand the ID of at least a portion (A) of the stretched parison to a second ID greater than the first ID.
2. A process as in claim 1 wherein the polymer material includes a polymer selected from the group consisting of olefin/ionomer copolymers; polyesters; polyamides; polyurethanes; polyetheretherketone; polycarbonates; poly(meth)acrylates; maleate polymers; and block copolymers having polyester or polyamide segments.
3. A process as in claim 1 wherein the polymer material includes a polymer selected from the group consisting of polyamide/polyether/polyester, polyamide/polyether, and polyester/polyether block copolymers; ethylene terephthalate polymers and copolymers; butylene terephthalate polymers and copolymers; ethylene naphthalate polymers and copolymers; and polyamides.
4. A process as in claim 1 wherein said extruded tubing segment is formed of a single layer of polymer material.
5. A process as in claim 1 wherein said extruded tubing segment is formed up of at least two layers of polymer material.
6. A process as in claim 1 wherein the balloon comprises a body portion

having proximal and distal ends; proximal and distal cone portions, the cone portions being respectively located adjacent the respective proximal and distal ends of the balloon body; and proximal and distal waist portions adjacent the respective proximal and distal cone portions, and wherein, in step (b), said portion (A) of the stretched parison forms at least the balloon body.

7. A process as in claim 6 wherein the stretched parison comprises a second portion (B1) having an ID which is not greater than the first ID and in step (b) one of the waist portions of the balloon is formed from said portion (B1).

8. A process as in claim 7 wherein said axial stretching further comprises the step (a)(ii), of forming said stretched parison portion (B1) by reducing a portion of the extruded tubing segment to an ID less than said first ID prior to said step (a)(i).

9. A process as in claim 7 wherein portion (B1) of the stretched parison forms the distal waist portion of the balloon, and the stretched parison comprises a third portion (B2) having an ID which is not greater than the first ID and in step (b) the proximal waist portion of the balloon is formed from said portion (B2).

10. A process as in claim 9 wherein said axial stretching further comprises the step (a)(ii), of forming at least one of said stretched parison portion (B1) and (B2) by necking down a portion of the extruded tubing segment to an ID less than said first ID.

11. A process as in claim 7 wherein said step (a)(ii) is performed at a pressure or temperature which is less than the pressure and temperature employed in step (a)(i).

12. A process as in claim 1 wherein in step (a)(i) the pressure is in the range of 25-1000 psi (172-6894 kPa) and the temperature is in the range of 15-60°C.

13. A batch of at least 50 sequentially produced balloons produced by the process of claim 1.